

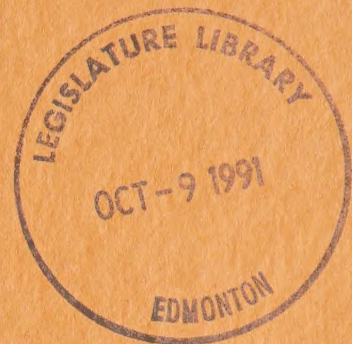
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Land Use and Resource Development in the
Eastern Slopes - Smoky River Drain 2



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LAND USE

and

RESOURCE DEVELOPMENT

in the

EASTERN SLOPES

SMOKY RIVER DRAINAGE BASIN

REPORT BY PEACE RIVER
REGIONAL PLANNING COMMISSION



ENVIRONMENT CONSERVATION AUTHORITY
ALBERTA

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REGIONAL PLANNING COMMISSION


ENVIRONMENT CONSERVATION AUTHORITY

9912 - 107th Street, EDMONTON, ALBERTA, T5K 1G5

MAY, 1973

The Environment Conservation Authority
presents this publication as background
information for its upcoming public
hearings.

This material was prepared by an outside
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LAND USE AND RESOURCE DEVELOPMENT

IN THE

EASTERN SLOPES

THE SMOKY RIVER DRAINAGE BASIN

Discussion paper prepared by the Peace River Regional Planning Commission
for the Environment Conservation Authority.

April, 1973

Cover Photo - Gerry Rushton

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Introduction

The Government of Alberta through the Environmental Conservation Authority is holding comprehensive and wide ranging hearings on Land Use and Resource Development in the Eastern Slopes of the Rocky Mountains and the Foothills Areas of Alberta.

For the purpose of the hearings, the Eastern Slopes are defined as the total mountain and foothills areas in the Province from its western and north-western border with British Columbia and its southern border with Montana to the eastern limits of the foothills. The National Parks and Indian Reservations are not included.

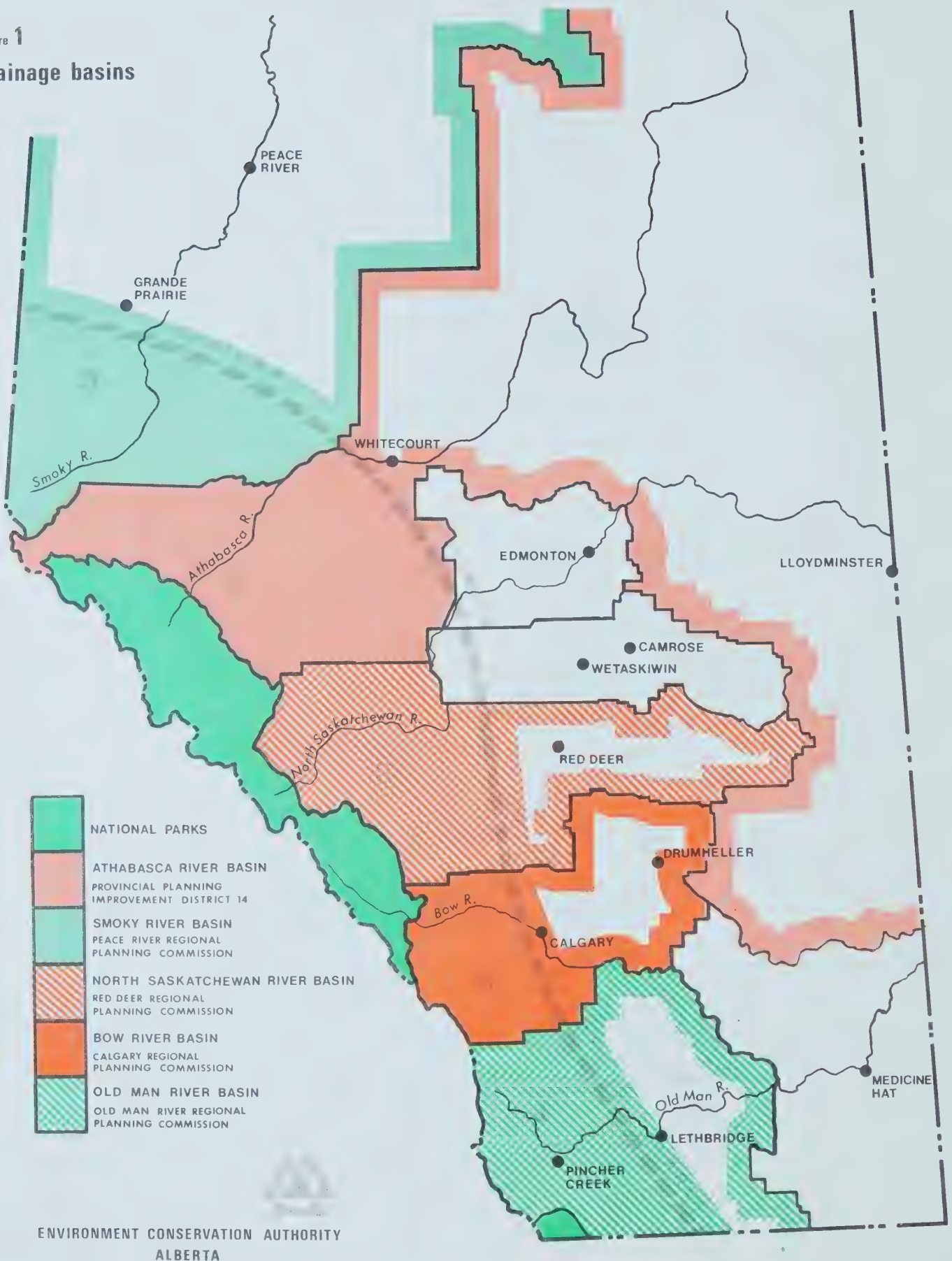
The eastern boundary of the area corresponds with the eastern edges of the foothills and is prescribed by an arc lying to the west of the Cities of Lethbridge, Calgary, Red Deer, Edmonton and Grande Prairie, as indicated on map #1.

The Eastern Slopes will be divided into five separate districts corresponding to the four major Regional Planning Areas and Improvement District #14. Each district will be identified with the name of its watershed and be associated with the regional planning area as follows:

<u>Watersheds</u>	<u>Planning Authorities</u>
1. Old Man River Basin	Old Man River Regional Planning Commission
2. Bow River Basin	Calgary Regional Planning Commission
3. North Saskatchewan River Basin	Red Deer Regional Planning Commission
4. Athabasca River Basin	Provincial Planning Branch
5. Smoky River Basin	Peace River Regional Planning Commission

Land is now used in the Eastern Slopes or is proposed for use for such purposes as tourism, summer and winter recreation, urban development, forest utilization, mineral resource industries, surface mining, underground coal mining,

figure 1
drainage basins



oil and gas development, agriculture, watershed conservation, domestic water supplies, hydroelectric power developments, wildlife and fishery management, wilderness and natural areas, institutional use (charitable and religious groups), archaeological sites, research, etc.

These different present and potential uses of resources within the Eastern Slopes area may either have no effect on each other, complement each other, conflict with each other, or relate to each other in sequential ways.

Submissions on the different land uses and how the several uses might affect each other are invited from all sectors of the public including developers, industry, regional planning commissions, cities, municipalities, towns and improvement districts, Indian Bands, universities and other such agencies, associations, groups and interested individuals.

All submissions on land use and resource developments will be accepted and considered at these public hearings.

The purpose of the individual regional planning reports are to assess each study areas for its resource potential, considering the present and the projected demands on these resources, and to acquaint the public with this information. All Planning Commission reports and the Foothills Resource Allocation Study reports will be made available to the public prior to the hearings so that comments and briefs concerning them can be presented at the hearings.

Objectives

Through Public Hearings:

- To enquire into all potential uses of resources
- To formulate ways in which optimum benefits and environmental conservation can be achieved now and for the future from various resources
- To consider and evaluate the views of the public on specific recreational and tourist development proposals

- To lay the views presented to the Authority and the Authority's recommendations thereon before the Government of Alberta

It is hoped this project will provide the Government of Alberta with a design which will define the most beneficial use of all resources of the region in order that all the provincial agencies may program their activities about this plan.

The Smoky River Drainage Basin

Location

Map 2 indicates the location of the Smoky River Drainage Basin study area in relation to the Provinces of Alberta and British Columbia and the Northwest Territories.

The following table indicates how the area is located relatively:

Approximate Aerial Distance in Miles to Grande Cache

Grande Prairie	85
Peace River	180
Edmonton	235
Jasper	85
Fort St. John	180
Dawson Creek	135
Prince George	140
Vancouver	360
Yellowknife	620

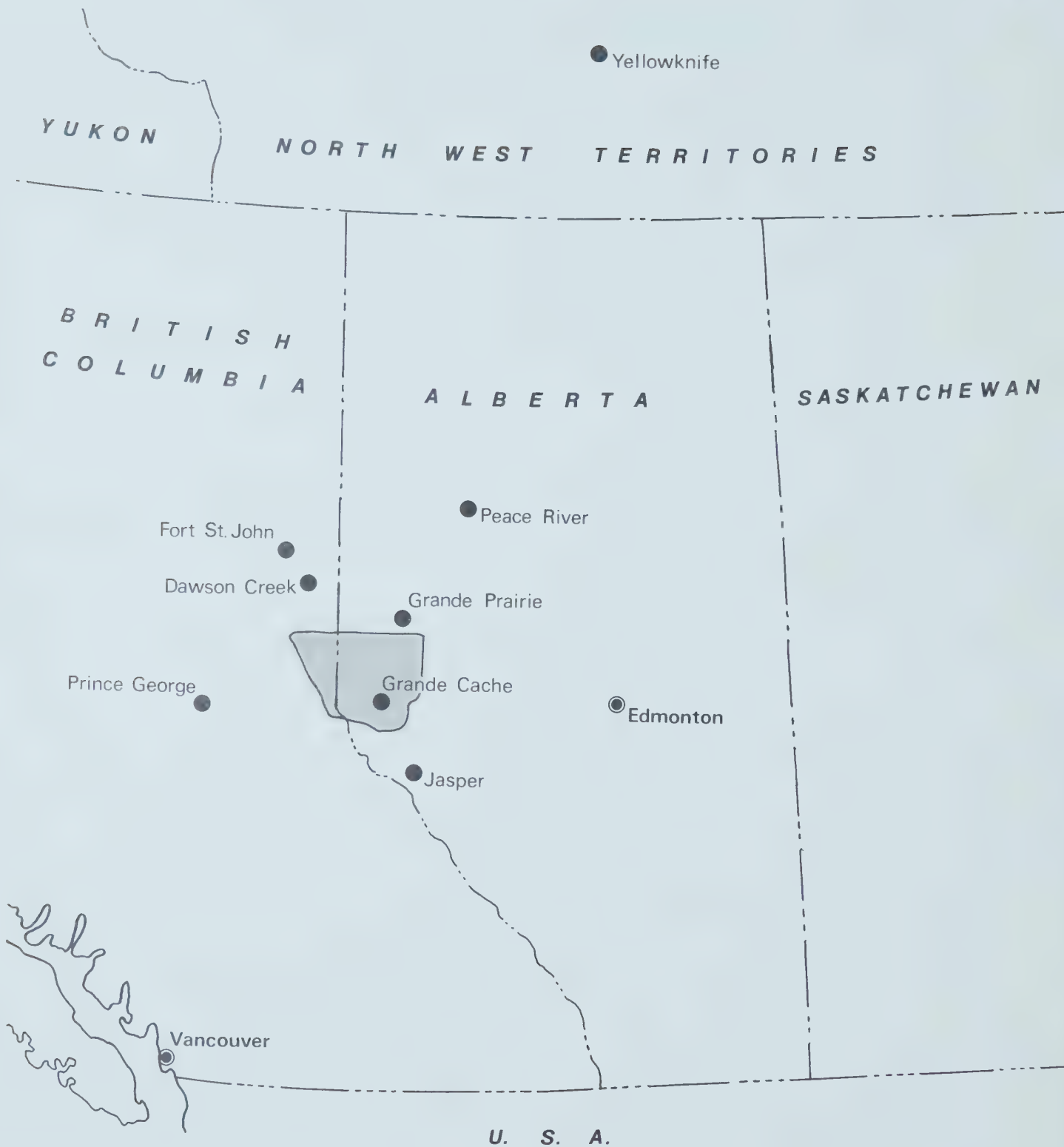
The Smoky River Basin for purposes of this study will include Willmore Wilderness Park (which is adjacent to Jasper National Park) to the south stretching northward almost to the Wapiti River. The British Columbia - Alberta boundary is the western limit while the area extends to the Simonette River district on the east. This is a very large area covering approximately 7,000 square miles.

History

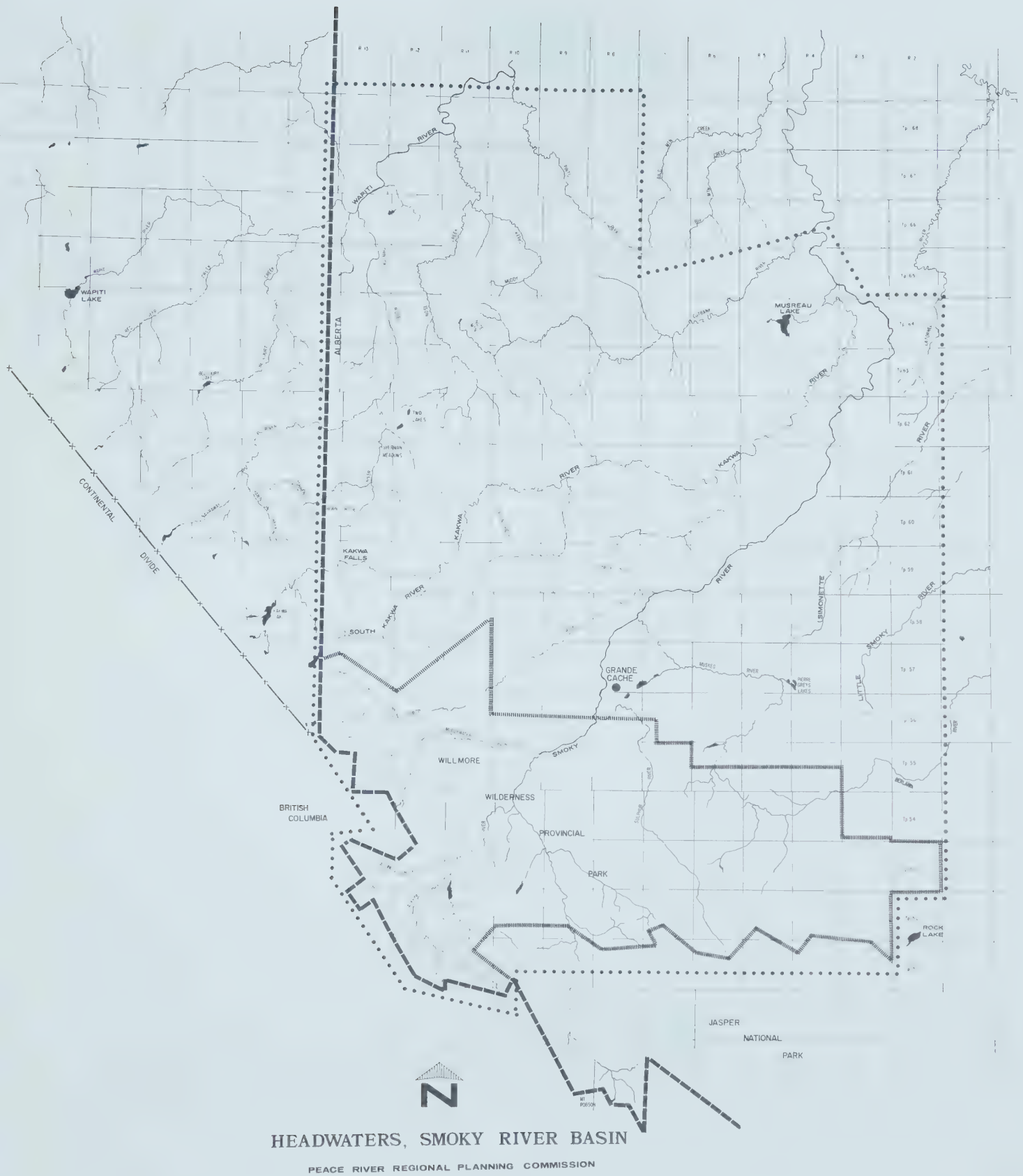
The Smoky River Basin was quite extensively travelled as a migration route by Indian people for many thousands of years after the ice ages. Later the land was visited by trappers and explorers. The earliest geological work done in the area was by G.M. Dawson who examined the lower part of the Wapiti River and Big Mountain Creek in 1879.

figure 2

location of study area



headwaters, smoky river basin



The Edson Trail, over which numerous settlers travelled on their way to the Peace River Country, lies in the eastern part of the study area. As the Peace River area became more settled guides and their clients and a few of the local population used the study area to the south for recreation and some employment through lumbering.

Until recently this area was considered by the general public as an unsettled area of bush in the western part of Alberta waiting for development.

Lumbering had been the most important and only industry for the study area until the early sixties when oil and gas exploration crews came. Coal mining interests then claimed parts of the study area for exploration purposes. In the seventies a pulp and paper company is preparing to start operations.

The area has been discovered and the industries are here. Provincial income from exploration rights and annual timber charges is a healthy part of the economy. The area is presently in a boom period.

Geology and Topography

The geology of the area resulted from the work of two continental ice sheets during the Pleistocene Epoch approximately 10,000 years ago. The first to affect the area was the Cordilleran ice sheet that advanced northeastward through the mountain valleys onto the plains. The Keewatin continental ice sheet advanced south and west and the meeting of these ice sheets collectively laid down a conglomerate of glacial deposits, that vary throughout the study area, consisting of sorted and unsorted clays, sands, pebbles and boulders.

The present day terrain elevation of the area declines from approximately 8,000 feet above sea level in the southwest to approximately 2,300 feet in the Wapiti Plain in the north and east.

The western Alberta plains comprising the largest portion of the area is of rolling topography with northeasterly flowing primary streams which are deeply incised and separated by high ridges of land oriented and lowering in elevation in the same directions as the streams. North and south flowing secondary drainage patterns cut into the land ridges allowing possible access into the primary stream valleys.

The northern portion of the area, the Wapiti Plain, is gently rolling in the south and level in the north. The northern portion contains large areas of vegetationally stabilized sand dunes developed through wind erosion of lacustrine (water deposited) materials. For the most part the land is spotted with muskeg.

Post glacial stream deposits of granular material have also been deposited in the valleys of existing streams.

Soils

Gleysolic soils are fairly common at lower elevations. These soils are found in areas of poor drainage and are characterized by a thin accumulation of peat at the surface.

Organic soils occupy a significant proportion of the poorly drained areas. These soils have more than 12" of peat at the surface. There are two types of these soils found, differing only in origin and texture. They are the sedge type, made up of sedge and grasses forming relatively fine fibrous peat, and the moss type, made up entirely of sphagnum moss and more coarsely textured. The latter type is the true muskeg.

The organic soils of the area are frozen to a depth of 20" to 24" in early May. This frozen layer generally recedes with the warmer temperatures of late spring and early summer and by late July the frozen layer usually disappears.

However, farther to the north, near the northern boundary of the study area, the permafrost persists in some instances throughout the summer months and has been found in moss bogs in the vicinity of Wapiti Post Office in early September.

The most commonly occurring soil in the study area is a grey wooded soil developed from glacial till. These soils are typified by a leached horizon at the surface that is underlain by a horizon of accumulated clay. The depth to lime carbonate varies considerably in this region, but on the average appears to be encountered at about 36" from the surface.

Soils developed from sandstone are found in hilly areas at higher elevations where bedrock occurs near the surface. These soils vary considerably in degrees of development ranging from grey wooded to podzol. Generally from an agricultural standpoint the soil is of poor quality.

Forest

Natural tree cover is present over the entire area, except at barren higher elevations of the mountains. Outcropping rock is common above the tree line and tundralike alpine meadows are present on the more favourable sites. In the southeastern foothills lumbering has removed much of the timber.



alpine meadow at
torrens lookout

White spruce and lodgepole pine dominate the coniferous forest on the untouched hills, whereas jackpine occur in the sandy or gravelly zones and may also be mixed with trembling aspen along streams. As elevations decrease towards the north, trembling aspen penetrates the coniferous forest and dominates on the lower foothills and plains. Where drainage is poor, such as in the northeast and on the tablelands of the east, muskegs characterized by black spruce, willow and labrador tea are prevalent. On poorly drained soils, sedges, marsh and bluejoint reedgrasses, birches and willows comprise the characteristic vegetation. Vegetative cover is a factor of soil formation and provides some information for differentiating soil drainage and texture within an area. Therefore, the major portion of mineral soil has the mixed cover of aspen, white spruce and jackpine while on the porous sandy soils the jackpine dominates and on the finer textured soils the white spruce predominates.

Climate

Grande Prairie, the nearest meteorological station, has a January mean temperature of 3.1⁰F and a July mean temperature of 60.3⁰F; however, the climate of Grande Prairie is more extreme than that of the study area to the south. The climate of this area is more moderate than the prairies because of the influence of the mountains and the chinook winds. Winters are long and cold and summers are short and cool. The mean temperatures here for January and July are likely 10⁰F to 60⁰F respectively. Annual precipitation ranges from 15 to 20 inches at the lower elevations to over 30 inches at the higher elevations where much of the precipitation falls as snow. In the extreme southwest, annual precipitation is over 50 inches at the very highest elevations west of the Continental Divide.

Minerals

Oil and Gas

The southwest part of the study area in particular is relatively unexplored mainly due to the lack of access and because the depths required to explore potential oil and gas producing formations are great.

The Research Council of Alberta, Geology Division, says in a report prepared for the Department of Highways and Transport:

"However, it is considered that the oil and gas potential of the area is good - especially the potential for "sour" gas and it appears likely that exploration activity will continue at a high rate for some time to come."

Coal

The Research Council states that:

"Two general types of coal are abundant in the map area: bituminous (coking) coal and subbituminous coal.

Bituminous coal is confined to the lower Cretaceous strata of the "inner" foothills, in the extreme southwest corner of the map area. Large reserves apparently are present in a zone that continues northwest from the present site of the McIntyre-Porcupine operation on the Smoky River, across the Kakwa River into British Columbia. Estimates of these reserves range from 250 to 500 million tons.

Subbituminous coal is widespread in the Upper Cretaceous strata in the west central and northern part of the map area. These non-coking low grade coals are unlikely to be mined in the near future."

Metallic Minerals

The Research Council states that:

"No known deposits of metallic minerals are present in the area, and it is unlikely that such deposits (iron, lead, zinc, gold, etc.) will be found. The possible exception is uranium, for which some prospecting has been done in recent years. However, to date no bona fide uranium showings have been confirmed, and present knowledge suggests that discovery of a major uranium deposit within the area is unlikely, if not improbable."

Industrial Minerals

Of the industrial minerals such as limestone, gypsum salt, phosphate rock, glass sand, bentonite, clay, shale and gravel, only sand and gravel bentonite, and possibly certain types of clays and shales, are known to be present. There is mention of some gypsum in the extreme southwest. None of these deposits except sand and gravel has any real commercial value at the present time owing to their distance from market and presence of similar deposits in other areas closer to market. There does appear to be more than adequate sand and gravel deposits available for highway construction purposes in the northern and western parts of the study area, but availability of construction material in the more central and southern parts is definitely low. Some fill material for roads in this area have been supplied from stream beds.

This section on Minerals is taken largely from -

Route Study, Grande Cache - Grande Prairie Highway,
Department of Highways and Transport, Planning Branch,
May 1972, P.9-12.

Water

A renewable resource which is becoming increasingly significant in the North American context, particularly in light of suggestions of massive inter-basin diversion schemes, is the Peace River Region's fresh water.

"Approximately 55 million acre-feet of fresh water were leaving the region each year in the Peace River alone, prior to the W.A.C. Bennett dam at Hudson Hope, British Columbia. Now the river flow is down to only 32 million acre-feet." (Webster, D.R., Preliminary Regional Plan (unpublished))

Reference to map #4 shows the relative magnitudes of Alberta's river discharges. From the relative size of the Peace River system the importance

figure 4

relative magnitudes of mean river discharges



SOURCE
NEILL, C.R., et al
'Selected Characteristics of
Stream Flow in Alberta'
Edmonton, 1970

of water power potential is obvious. However, the slumping potential of the valley walls of most of the primary and some of the secondary streams is extremely high throughout the entire area. Due to this fact of poor foundation conditions, the development of this water potential is highly unlikely.

The sensitivity of watersheds in the study area is very great due to high annual precipitation and the fact that the watersheds are small, more compact and express changes in water production (quantity and quality) very quickly. This is evidenced by the flood of June 1972. The farther southwest and therefore higher one travels, the greater the climatic extremes there are influencing these watersheds and the greater the time required for adjustments to changes and disturbances.

The continental divide forms the southwest study area boundary and continues northwest into British Columbia. This divide, being the high point of elevation, is the split between the Arctic and Pacific river systems.

Many important headwaters are in the area with others just to the west and south of this area. Since the extreme headwaters are fed by glaciers and icefields, the rivers are assured of a year around flow of water. This is especially important in the dry summer periods when domestic demands are highest.

The headwaters of the Smoky River is just to the south of the study area, originating in Jasper National Park, on Mt. Robson. The Wapiti River flows into the Smoky River, which in turn runs into the Peace River system. Both the Wapiti and Peace Rivers originate in British Columbia.

Due to the Alberta-British Columbia boundary not following the natural boundary (the continental divide) and the sensitive headwaters being largely outside this study area, and the possibility of water power potential being developed, the region is not in a healthy or enviable position with regard to downstream water rights.

Fish and Wildlife

The study area abounds in upland wildlife. A variety of species are present, including mountain sheep, mountain goat, moose, elk, deer, caribou, black and grizzly bear.

At present there seems to be some depletion of the big game potential as mountain goat, caribou and grizzly bear are becoming increasingly harder to find. This is due largely to the fact that resource exploration has made the area accessible to the hunting public.

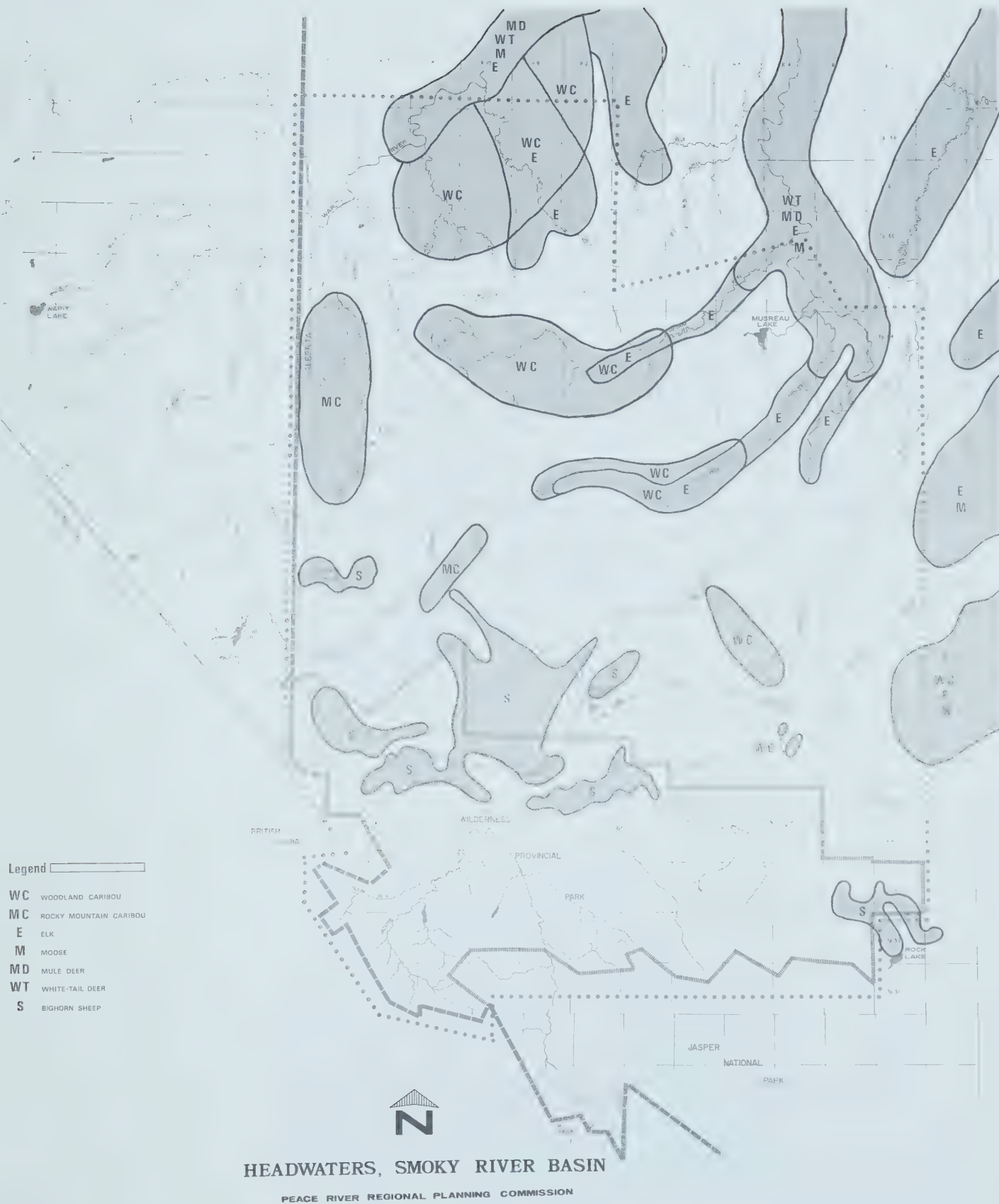


seismic cut lines
near chinook ridge

The area has prime grazing range for many of these animals. In fact the study area contains two key winter ranges for Rocky Mountain Caribou which are among the last available areas in Alberta for this species.

Many of these species are considered "climax" animals. They are very sensitive to human activities and tend to disappear from areas of development. Even the increased air traffic over the area has affected game population.

key winter range



Sheep, goat, caribou and grizzly bear will very soon need a protective status if indeed they are to be protected.

Angling is very good in the area. The light usage, caused by poor accessibility in much of the area, has maintained this potential. Good stocks of native sport fish, such as Dolly Varden, Arctic Grayling and Rocky Mountain Whitefish inhabit most streams, except for a few small organic creeks in the north. Rainbow Trout have been stocked in Two Lakes and Cutthroat Trout stocked in the Torrens River system. Fish populations are directly related to watershed conditions. Erosion from road cuts increase the stream sediment load. Revegetation stabilized the slopes and decreases these stream sedimentations, increasing water quality and sport fish productivity. Therefore, vegetation cover and soil condition is very important.

Timber Operations

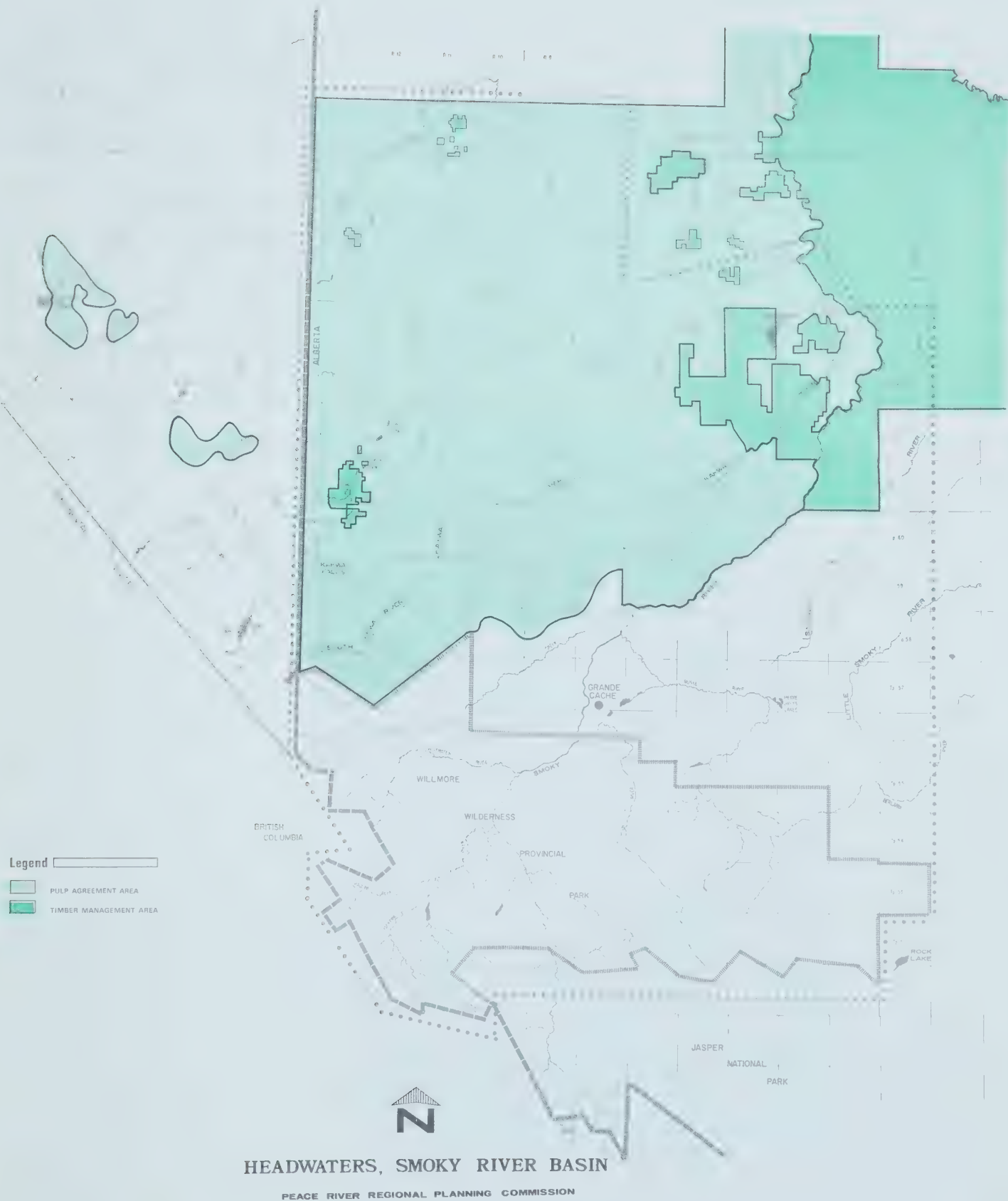
Forestry is the major resource at the present time and there are three main companies with operations in the study area. They are as follows:

- A. Procter and Gamble Cellulose, presently constructing a pulp mill near Grande Prairie and holding large pulp leases in the study area.



procter and gamble
pulp mill

forest management areas



- B. Imperial Lumber Co. Ltd., presently operating a planer mill in Grande Prairie and contracting with sawmills at Grovedale and Sherman Meadows.
- C. North Canadian Forest Industries, operating a sawmill, planer mill and plywood manufacturing plant in Grande Prairie; as well as a sawmill at Hines Creek and operations at Chetwynd, British Columbia.



clear cutting blocks

These companies' operations are all predicted on a perpetual yield basis and each company at present has a haul road system that is essentially separate from the others, although there are certain cases where they may share sections of road.

The Grande Prairie Regional College, in conjunction with the local timber industries, offers a timber management course at Musreau Lake. This course deals with all aspects of the trade from selecting and cutting, to hauling. The produced timber is sold locally. Approximately five instructors and twenty students are involved. The students are clearing a proposed recreational site on Musreau Lake working closely with the Alberta Forest Service, Grande Prairie.

Drilling Operations

Atlantic Richfield Co. Ltd. operates the Gold Creek Gas field and sulphur plant to the north of the study area approximately 25 miles south of Grande Prairie. This is the only producing gas field west of the Smoky River. It produces sour gas and the liquids are transported out by pipeline while the sulphur is hauled by train via the Alberta Resources Railway. To the east of the study area are the Simonette Oil field and the Berland River Gas field. Within the study area itself there are no known finds of oil or gas at present, however exploration is continuing.

gas and oil
exploration

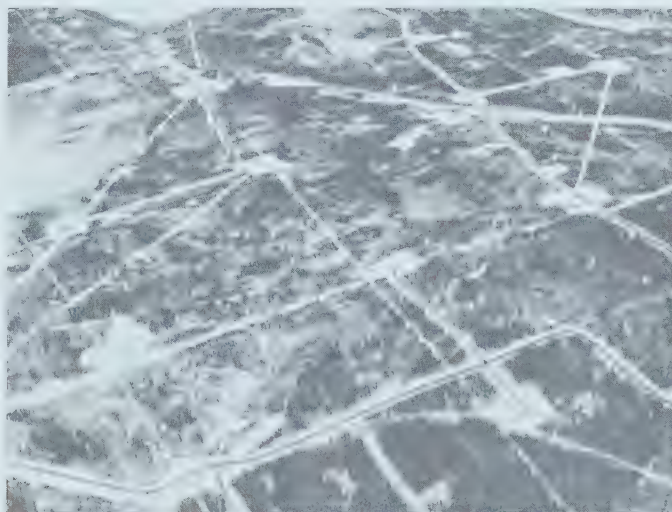
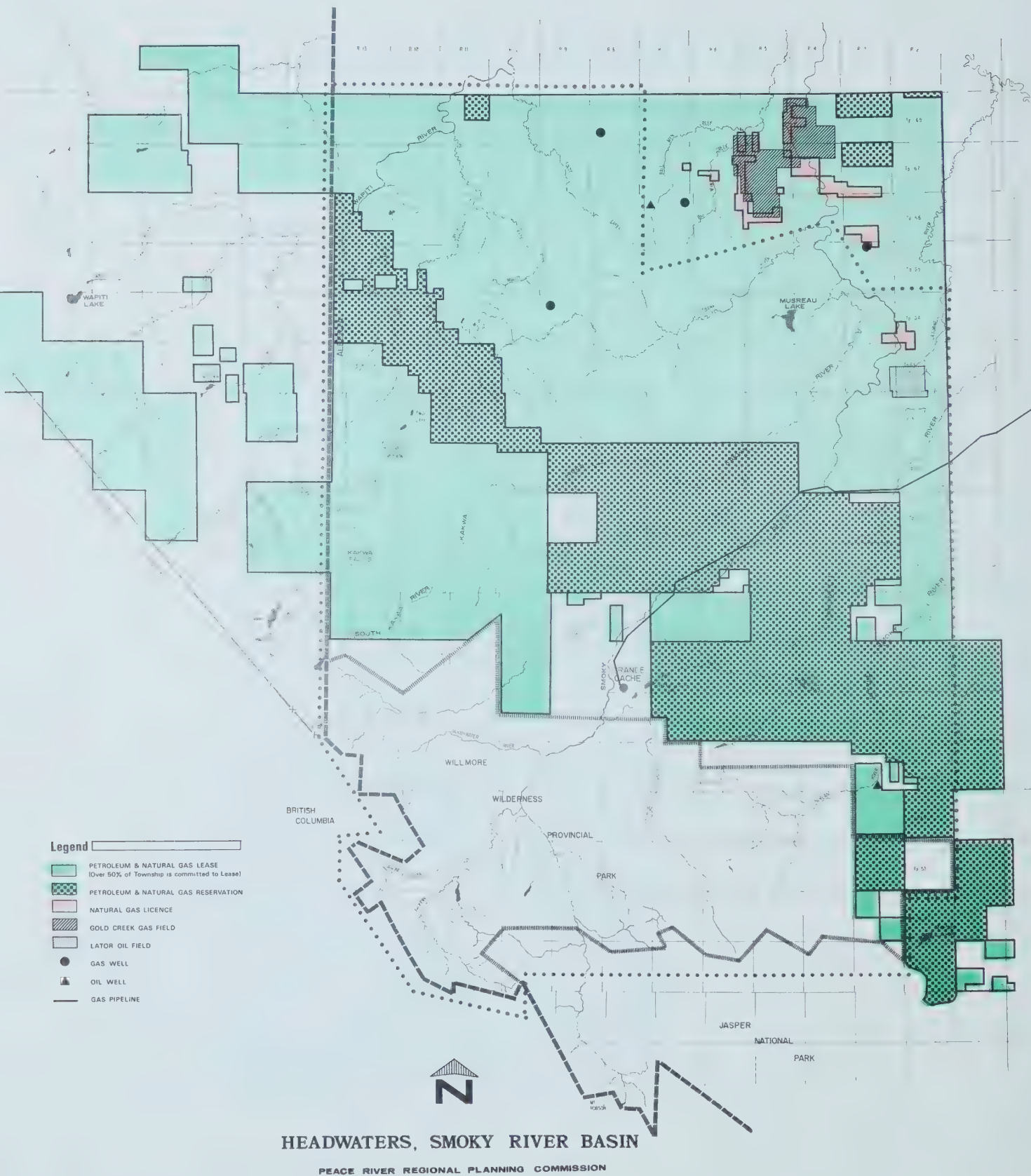


figure 7
 extent of oil and gas leases



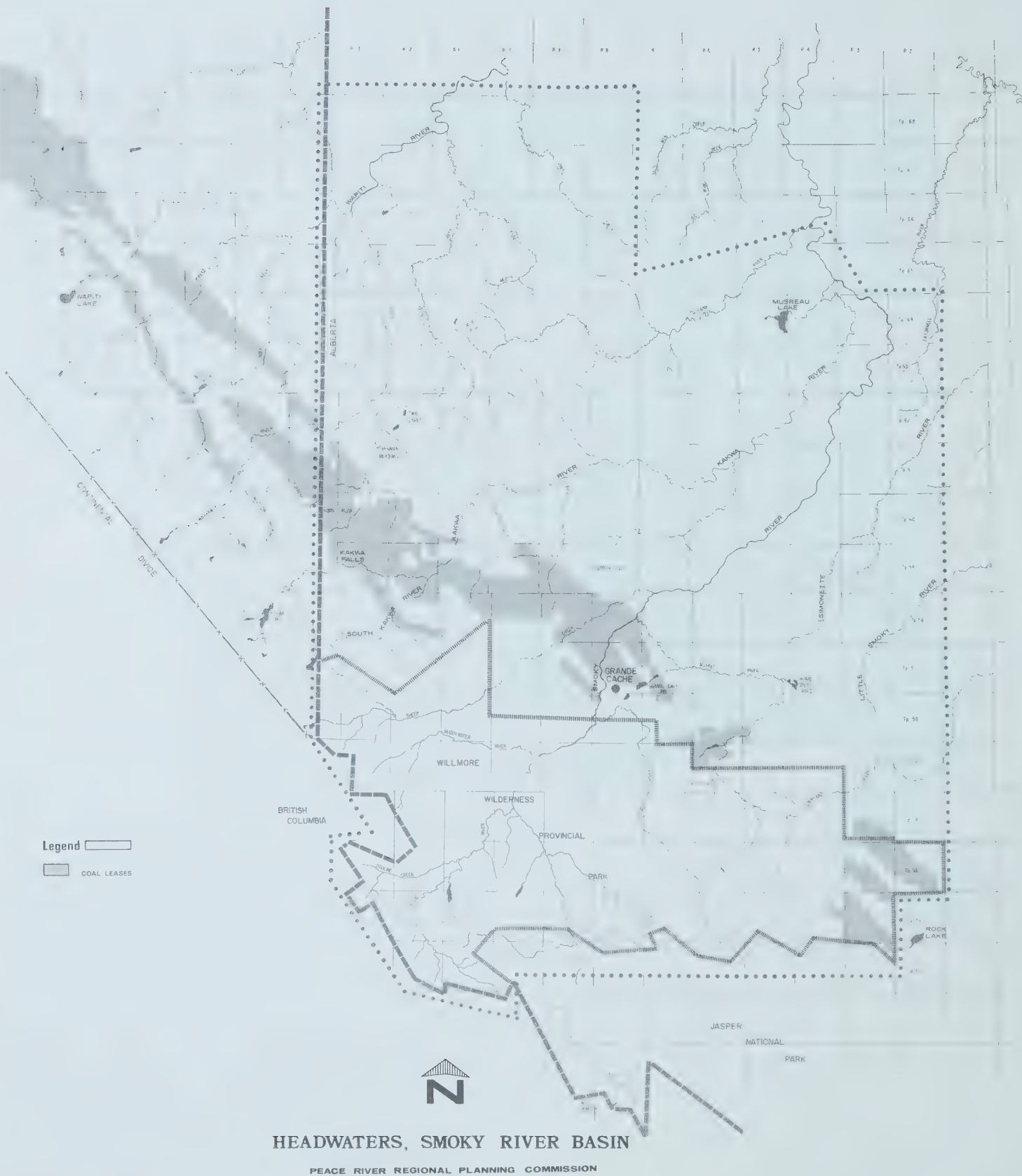
Mining Operations

McIntyre Porcupine Coal Mines Ltd. operates coal mines in the south of the area on the Smoky River just north of Grande Cache. At present McIntyre has only two mines operating. No. 2 is an underground mine while No. 8 is an open pit or strip mine. No. 5 was closed in January as the operation was deemed too expensive. Now McIntyre Porcupine has a proposal for a No. 9 mine located on Sheep Creek (Twp. 58, Rge. 8 & 9, W6) just north of the present operations.

mcintyre porcupine
coal mine



coal leases



Located beside the McIntyre Porcupine mining operation is Alberta Power's 150,000 kilowatt H.R. Milner generating station. The power plant uses middling coal, a by-product of the coal mine, as its source of fuel.

There are also various other coal mining interests in the study area including Denison Mines, Consolidation Coal Company, Kakwa Mining Company and Woods Petroleum.

Notus Exploration, the exploration division of Cyprus Mining, in conjunction with Kakwa Mining who hold the lease, is currently exploring Horn Ridge (Twp. 60, Rge. 13, W6) for a potential mine site (1980).

horn ridge





exploration for coal
(some trenches are 40 to
50 feet deep)



**erosion from coal
exploration**
(sludge is incapable of
plant growth of any kind)

Agriculture

There is very little farming done in the Smoky Basin area and there is little potential of any further clearing for farm land. Farming in its present sense is usually implied applicable only to areas below the 3,000 foot contour level. This limit is reached by factors of soil types, limited frost free period and other climatic conditions. If this limit is applied to the study area, it virtually eliminates over half of the area.

The land remaining is too steeply sloping, has excessive stoniness (rough moraines made up of gravel), is deeply leached and quite infertile. The area has wind blown sand deposits (dunes) together with bogs and muskeg.

Some of the river terraces have a potentially moderate agriculture rating but due to immature soils from periodic flooding, it does seem doubtful that they will be farmed in the near future.

There is some mixed farming done along the Wapiti River with some home-steading, but the land is considered more useful for pasture and woodlots. At the moment several large grazing leases are found on the northern and eastern fringes of the study area. However, the production of grass and hay is only moderate. Therefore, agriculture in the study area is of very little importance and probably will remain so.

Recreation

The high foothills and low mountains of the study area in particular are scenic and only the extreme northern part is flat, with less recreational potential. A few shoreland units are present on Two Lakes, Musreau Lake, the Wapiti River and the Smoky River below its confluence with the Kakwa River.

The broad Smoky River valley provides greater accessibility and camping potential and has a more usable backshore than the narrow, steep-sloped valley

of the Wapiti River. Both the Wapiti and Smoky Rivers can support boating but are not especially suitable for this activity due to rapids. Many local inhabitants do enjoy boating in river boats equipped with jet engines that have a very shallow draught. Because the river banks are incised, they are quite picturesque. The potential for canoeing and angling is very good.

Musreau Lake is suitable only for boating, angling and some cottages or camping. Much of the shoreland is muskeg, the water is organic and algae bloom is prevalent. Two Lakes has no beaches, but its good camping and angling and picturesque setting combine to give it a high capability for recreation. Two Lakes also offers a view of distant snow covered mountain peaks.



**the south lake of
two lakes**

(plugged oilwell site on middle
right side of photograph has
subjected lake to some pollution)

Boating is restricted by the size and location of the various lakes. The following is a list of the lakes in the study area affected by boating regulations:

Water Restriction Regulations

Waters on which power-driven vessels are prohibited except with the authority of the Federal Minister of Transport.

Nose Lake

Twp. 64, Rge 11., W6 45 miles southwest of Grande Prairie

Donald Lake

Twp. 58, Rge. 1, W6 45 miles east of Grande Cache

Joachim Lakes

Twp. 57, Rge. 3, W6 30 miles east of Grande Cache

Victor Lake

Twp. 56, Rge. 8, W6 southwest of Grande Cache

Pierre Greys Lakes

Twp. 57, Rge. 4, W6 25 miles east of Grande Cache

Waters on which power-driven vessels are subject to a maximum speed limit (8 mph).

Two Lakes

Twp. 62, Rge. 12, W6 100 miles southwest of Grande Prairie

A la Pêche Lake

Twp. 55, Rge. 6, W6 14 miles southeast of Grande Cache

The total study area is especially suitable for extensive forms of recreation, such as hunting, fishing, camping, canoeing, viewing, hiking, trail riding, cross country skiing, and nature study. The scenic setting, streams, and topographic diversity ranging from forest to alpine tundra contribute to the recreational potential. The streams in the mountains and high foothills have the highest recreational potential in the uplands and are suitable for camping, viewing and angling. Intensive recreation could wipe out some of these spots in two years. The Smoky, Narraway, Simonette and

Kakwa Rivers are large enough to have a good capability for canoeing.

In the southwestern part of the area, Willmore Wilderness Park is a haven for the naturalist. The rugged topography, drainage dissection and high peaks provide outstanding scenery. To preserve the park, no motor vehicles are allowed in. There are few facilities for the trail rider, fisherman, hunter, and nature lover. The Department of Lands and Forests maintains several cabins, towers, and trails throughout the park. The Willmore Wilderness Park Act (R.S.A. 1970, Chapter 392) states:

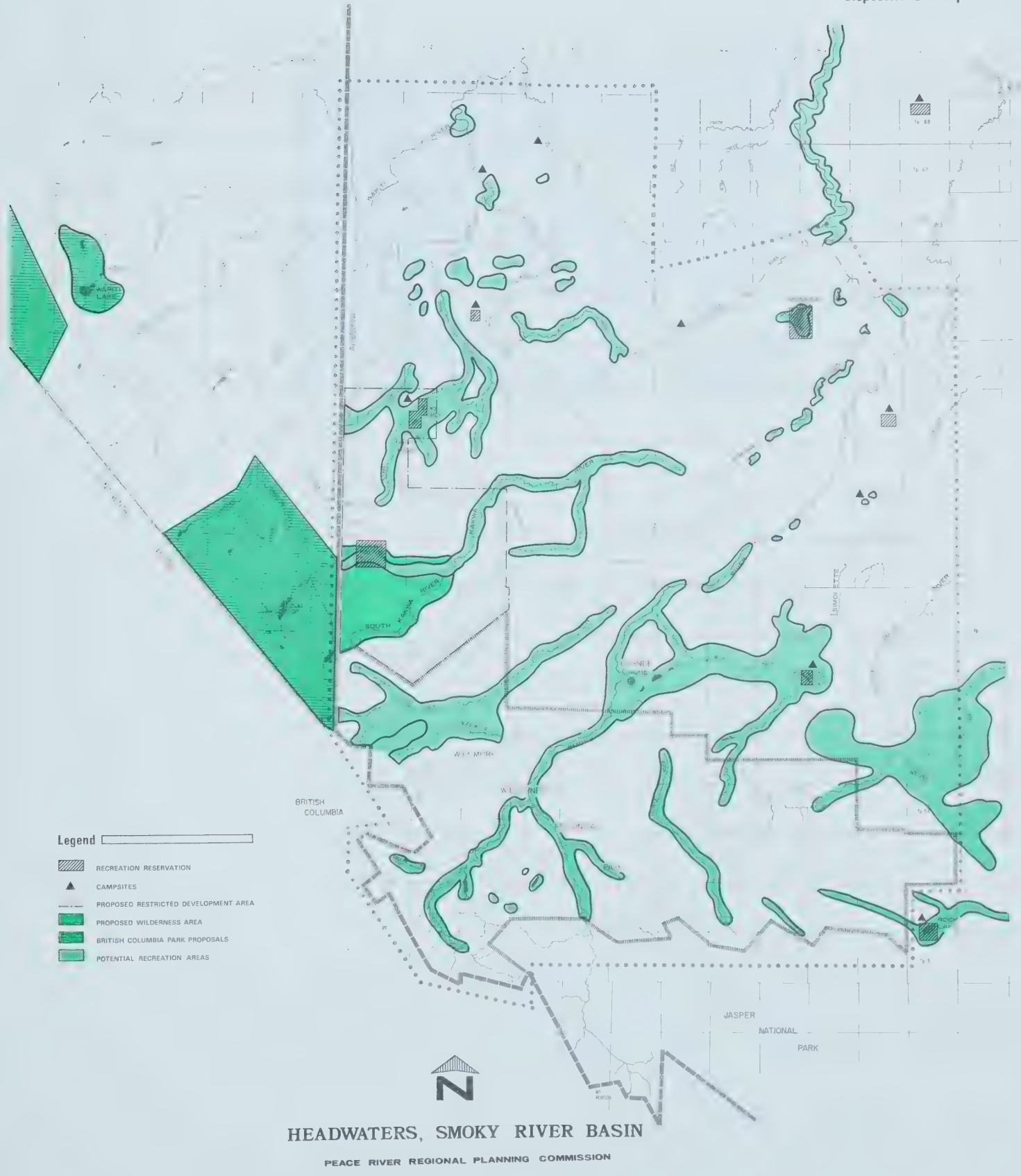
"4. The Park is dedicated to the use of the people of Alberta for their benefit, education and enjoyment, subject to this Act and the regulations, and shall, by the management, conservation and protection of its natural resources and by the preservation of its natural beauty, be maintained for the enjoyment of future generations. (1959, c. 95, s. 4)"

However, the Act also states:

"7. Nothing in this Act affects the administration and control of mines and minerals within the area of the Park. (1959, c.95, s.7)"

This means that the Department of Mines and Minerals has power to override the original purpose of the wilderness park. Under pressure of development the boundaries of Willmore have changed several times and the sanctity of the wilderness violated.

recreation
dispositions and potential





kakwa falls

North of Willmore, the Kakwa Falls have excellent capability for recreation, viewing and fishing. These spectacular falls, which plunge over 100 feet into the gorge below, are the focus point for the Kakwa Natural Area of approximately 4 square miles set up by the Provincial Government.

Meanwhile, the Wild Kakwa Society, a local conservation group, proposes a total wilderness area within the triangle formed by the Kakwa and the South Kakwa Rivers (less than 100 square miles) surrounded by an area of 20 townships to be restrictive development and to act as a buffer zone. This buffer zone would in effect regulate development on the fringes of the wilderness by controlling the types of resource extraction industries allowed here. Provisions for a Provincial Park could also be made near the falls. This would provide access to the falls but very limited access beyond, into the wilderness. This proposal has been pushed for several years and has the support of 10,000 residents.

kakwa falls



This is one of the very few areas suitably located to the populated Alberta and British Columbia Peace River Regions which offers outstanding scenery comparable to the Rocky Mountain National Parks.

There are several campsites in the study area. Several trail riding and guiding organizations offer trips over various routes. Charter flights are available over the area and there has been mention of offering sightseeing trips on the Alberta Resources Railway. There are also several fine viewing spots on the Hinton - Goodwin road and at Chinook Ridge on the Two Lakes Forestry road.

The total recreation capability of the study area is high but the recreation activities are extensive types. That is, the area has very high potential for recreational purposes but these outdoor activities cannot support high numbers of people at the same place, at the same time without some serious

effect to the landscape or total environment.

Transportation

Roads

The existing roads in this area are a combination of Forestry access roads and petroleum and lumber company private roads usually held under a License of Occupation.

The most direct road connection between Grande Cache and Grande Prairie at the present is via the Forestry Trunk Road from Muskeg to just north of Kar Lake and then on a combination of North Canadian Forest Industries and Imperial Lumber Company roads that connect from the Trunk Road across the Smoky River to south of Grande Prairie.

The distance from Grande Prairie to Muskeg via this route is approximately 124 miles as compared to approximately 145 miles via the Trunk Road to Goodwin then on Highway 34 to Grande Prairie.

Access to the western part of the study area is by the Two Lakes and Kakwa Tower Forestry Road.

A fairly comprehensive system of forest product haul roads into the north central part of the area has been developed by North Canadian Forest Industries Ltd., Imperial Lumber Co. and lately Procter and Gamble Cellulose Ltd. These roads are being extended to new areas each year.

The Procter and Gamble road system is being constructed to an all-weather standard while some of the other two companies' roads are constructed for winter use only.

The Department of Highways and Transport maintain some local roads in the Grovedale - Wapiti area for access to the farmers in the relatively small settled area just south of the Wapiti River.

The Department is also constructing a new high standard road from Grande Prairie south across the Wapiti River, which included a new bridge over the Wapiti River. This road will form the north section of the proposed Grande Cache - Grande Prairie highway. The southern part of this highway from Grande Cache to Hinton has also been basically constructed but not fully completed.

There are also numerous bush roads, trails and cutlines that are used by hunters and fishermen within the interior of the area.

Rail

The Alberta Resources Railway linking Grande Cache to Grande Prairie is the only railway in the area. This line has links to the Procter and Gamble Pulp Mill, Richfield Gas plant and McIntyre - Porcupine Coal Mine. At the moment the line is inoperable due to 35 miles of washout which occurred during the spring run-off in 1972 but preparations for repair in 1973 are in the process.

Pipelines

There are several underground oil and gas pipelines running across the area.

Air

There are numerous small strips maintained for forestry towers and access to the area by the Department of Lands and Forests.

Water

There is no development of commercial water transportation at present and there is none expected. The river valleys are not feasible for this use.

At the moment they are used strictly by outdoorsmen for recreation purposes.

Settlement

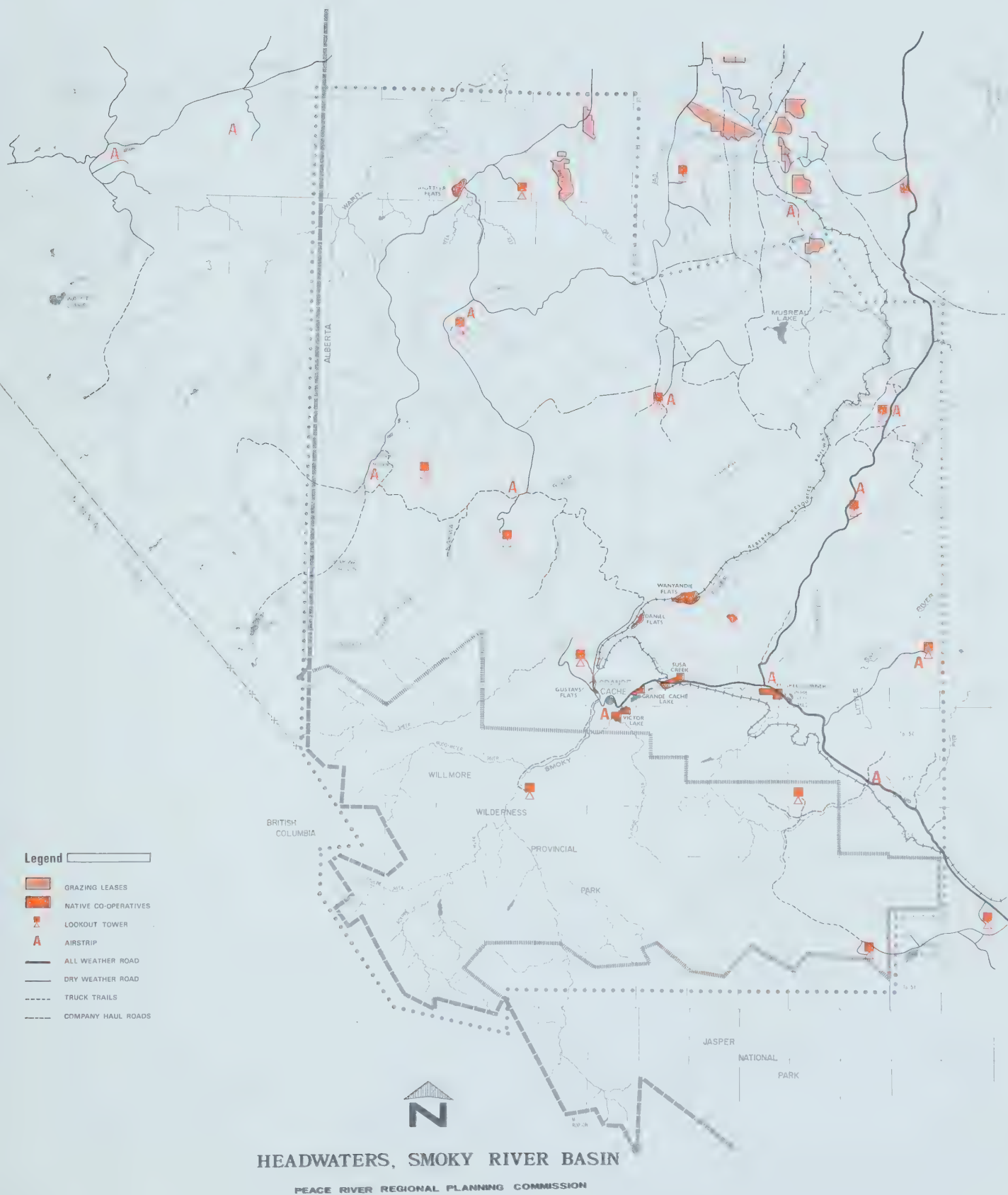
At present the Town of Grande Cache (population approximately 3,000) at the southern edge and the City of Grande Prairie (population 14,739) to the north, are the only two major centers near the study area. As a result of McIntyre - Porcupine Mines Limited closing down the #5 mine and laying off approximately 150 miners, the population of Grande Cache has dropped by approximately 500 in the last couple of months. This situation may change if and when McIntyre - Porcupine open up the #9 strip mine.

A narrow band of agricultural settlement and homesteads extends along the extreme northwest adjacent to the Wapiti River that probably will not enlarge to any great extent due to the limited area of arable land available and the economics involved in farming or homesteading.

The native people use the land for hunting, trapping, horse range, camping and just basically enjoying it. Several small settlements of these people are present at Muskeg Corner, Susa Creek, Daniel Flats, Victor Lake, Grande Cache Lake and Shuttler Flats. Northlands School Division #61 operates two schools in the area at Nose Creek and Kakwa. These schools have thirteen and twenty-two students respectively with most of the work done through correspondence. Forestry towers and cabins are scattered throughout the entire study area. A few people are also located at sawmills and other camps.

Therefore, the bulk of the present population of the area is concentrated on the fringes and it is very unlikely that this distribution will change in the near future.

transportation and settlement



Discussion

The Indians were the first inhabitants of this land. To them the land meant life. Life was all important, so the land was worshipped. The early settlers, as well, had a deep appreciation for nature. But they were determined to subjugate it to their control in order to gain a living from the land. To the early settler, the landscape had to be revered because it was the direct source of his livelihood.

Things have changed since that period. Man now has tools that so extend his power that any attempts to subjugate the land for profit can do irreparable damage. In other words, man's desires have not changed much, but his abilities to wreak havoc have so changed that he must go through a period of value transition.

The economy is almost entirely dependent on resource exploitive activities and secondary processing. If too much dependence is placed on short-term extraction and exports of non-renewable resources such as petroleum and natural gas, the eventual exhaustion of such resources may bring about severe economic hardships and unemployment in the Peace region.

The environmental and ecological effects of such primary activities as timber harvesting and fossil fuel extraction may be very costly, in terms of quality of life, for regional residents.

The landscape is being developed not to secure a living for local inhabitants but to feed industrial processes and eventually consumer demands outside the region. Diversification of economy via installation of resource processing plants may only lead to further deterioration in the environmental quality of the area.

Yet the people are afraid their children will leave the region. The development of resources could create jobs - both unskilled and skilled. This

would give people a reason to stay within the region or return after further education. With development and jobs, money comes into the region and the financial situation is such that it could always be better.

But then again, the youth are relating more to the natural environment wanting more and more outdoor recreation as an escape or change from the modern urban environment. The lack of recreational areas and facilities is a definite influence on the staying or leaving of these people. They must have somewhere to recreate! At the moment most young people are here only for the money they can make. They then leave the area to enjoy the good life their earnings can buy elsewhere.

This then is the challenge of the entire Peace region. It is an area with mineral and timber resources. But it is also an area that only a few years ago contained numerous wildlife. It is an area settled by some people who desired solitude, peace, refuge and did not want to be part of the mainstream.

There are obviously numerous paths that the area can take. One would be wholesale exploration of all its resources with resulting urbanization, pipelines, roads and eradication of most wilderness areas. Or on the other hand, it could develop into one large wilderness park except for settlement which currently exists. A middle course might be based on restricted growth. Resource development would only be permitted when ecologically sound and when full benefits would accrue to the region (that is, local or Canadian capital would be involved and considerable processing would occur in the region).

These three possible futures are outlined on the following pages. The advantages and disadvantages of each model of development are outlined as well as the characteristics of each type of growth. In addition, the reasons why each model of development could occur are outlined. These three models are directly from Webster, D.R., Preliminary Regional Plan (unpublished).

The Wholesale Exploitation Model

Characteristics:

- Immediate extraction of valuable materials
- Large population increases especially during the exploration stages
- Heavy involvement of multi-national corporations
- Heavy in-migration of professional people from outside the region
- Heavy construction of infrastructure: e.g. roads, railroads, power facilities

Advantages:

- Maximizes the gross regional product
- Provides jobs for local people: primarily of an unskilled nature
- Improves accessibility and contact with outside world
- Provides income from resources now rather than in the future
- Creates a new social structure in the region

Disadvantages:

- Severe ecological damage
- Income flows now are at the expense of future generations
- Disrupts the way of life of indigenous peoples and others who have settled here desiring solitude
- Creates boom town and ghost town situations in some cases
- Non-Canadian ownership is usually involved
- Most products from the raw materials aren't manufactured here so that the bulk of profits accrue to other regions
- Rapid growth waves are formed creating regional inflation, housing shortages, service shortages, etc.
- Rapid growth tends to borrow from more developed regions in terms of structures, etc. rather than allowing the local culture to evolve their own landscapes

- Often makes distribution of incomes more inequitable and severely penalizes those on fixed incomes
- Provides a situation for corporate retailers to replace local merchants

Reasons for Occurrence:

- Those who occupy major decision-making posts (e.g. Chambers of Commerce, local politicians) have the most to gain from such models of development
- The Provincial Government earns large royalties from such developments
- Residents of Frontier regions live in isolated areas which are widely separated from each other and thus find it difficult to organize to oppose such development
- Residents of the region are less experienced than residents of other regions in the province and thus often do not understand the proper channels of opposition
- In the past, projects have not been debated locally to any extent before being located here
- If other alternatives are not forthcoming, residents have no choice but to accept such a model of development
- The public has not been fully informed concerning the consequences of such models of development

The Wilderness Model

Characteristics:

- No additional resource development
- Slow population growth based on natural growth (minus net out-migration plus those who choose to live here to experience the wilderness having their own incomes or entrepreneurial schemes that do not involve resource exploitation)
- Settlements will grow slowly
- The Gross Regional Product will not expand rapidly
- Retention of large amounts of landscape in its natural state
- A minimum of outside influence determining the course of the region

- Limited In-migration
- Little additional construction of infrastructure

Advantages:

- More equitable distribution of incomes
- Non-disturbance of the traditional ways of life of the Indian and Metis peoples
- Highly ecologically sound
- Provides option of income flows to the region (probably of a much higher value) at a later date
- Provides option of building resource-processing complexes with Canadian capital at a later date yielding much higher returns to the region than currently are occurring or would occur with the wholesale exploitive model
- Maintains present social structure
- Avoids Boom-Ghost Town phenomenon
- Minimizes Regional Inflation, housing shortages, servicing shortages
- Enables the Human Landscape (geography) to evolve slowly and hence more in harmony with the natural environment
- Minimizes the need for Foreign capital and hence Foreign control of the major economic processes
- Does not penalize those on fixed incomes
- Maintains the local merchant pattern

Disadvantages:

- Does not maximize the gross regional product at present
- Does not maximize the size of the population
- Results in lower incomes for those in the upper strata
- Does not maximize the size of the local market

- Does not provide income from resources now
- Does not develop the infrastructure
- Out-migration of young people may be high, particularly those who obtain an advanced education
- It requires considerable energy to maintain such a path of development because the economic system operating in North America heavily stacks the odds against it
- May antagonize certain corporations and government agencies operating outside the region

Reasons for Occurrence:

- The people would have to organize and demand an end to certain types of development
- The Provincial and Federal Governments would have to be convinced of the long-term utility of such a path of development
- Administrative mechanisms would have to be created to prevent certain types of development from occurring
- The people would have to have decided that the quality of life and the quality of the landscape are more important than the Gross Regional Product

The Middle-Road Model

Characteristics:

- Resource development occurs only when it is judged to be ecologically sound and the bulk of economic benefits will accrue to the region
- Resource development occurs only when the majority of people in the region have voiced their approval
- Moderate population growth
- Moderate growth of the Gross Regional Product

- Moderate In-Migration to the region
- Moderate growth in infrastructure
- Virtually no outside influence (outside Canada) in development of resources
- Retention of considerable amounts of landscape in its natural state
- Moderate Growth of Local Market
- Moderate out-migration of young people from the region

Advantages:

- Moderate Growth of Gross Regional Product
- Retention of a large number of youth in the region
- A Growing Local Market for goods and services
- Only moderate change in the social structure of the region
- Provides some jobs for local people
- Provides a source for development of the economy
- Moderate growth of population
- Some growth in the infrastructure
- Retention of some wilderness areas and large amounts of recreational space
- Less disturbance of the traditional ways of life of the Indian and Metis peoples than the Wholesale Exploitation model
- Less ecological damage than with the Wholesale Exploitation Model
- Provides some option of income flows to the region (probably of much higher value) at a later date
- Eliminates problems of regional inflation, housing shortages, etc. associated with extremely rapid growth
- Provides some option of building resource-processing complexes with Canadian capital at a later date yielding much higher returns to the region than currently are occurring or would occur with the Wholesale Exploitive model

- Minimizes danger of Boom-Ghost Town phenomenon
- Enables the Human Landscape to evolve more slowly and hence more in harmony with the natural environment than is the case with the Wholesale Exploitive model
- Reduces the need for Foreign capital and hence Foreign control of the major economic processes
- Reduces economic penalties to those in the region on fixed incomes
- Reduces the threat to regional merchants

Disadvantages:

- Does not maximize the Gross Regional Product at present
- Does not maximize the size of the population
- Creates fewer professional positions
- Does not maximize the size of the local market
- Does not maximize the income flow from resource development now
- Creates a reduced infrastructure in the region
- May antagonize certain corporations and government agencies operating outside the region
- It requires considerable energy to maintain such a path of development because the economic system operating in North America heavily stacks the odds against it
- Out-migration of young people may be higher than with the Wholesale Exploitive model although with youth's increased emphasis on the non-material aspects of life, the converse could occur
- Some ecological damage will occur
- Considerable wilderness will be destroyed
- Recreational space will not be maximized

- Does somewhat reduce options concerning the construction of a future resource complex or Canadian development

Reasons for Occurrences:

- It is always easier to drive the middle of the road

The following is a list of concerns. Refer to the three models of future development just stated and apply them to the individual issues. This hopefully will set the stage for some thought and discussion.

Jurisdictional Authority	- Present land use
Exploration, exploitation and development	- Wilderness parks and wilderness
Timber leases (clear cutting) coal leases (strip mining) gas and oil exploration (cut-lines and roads) grazing leases	- Indian land tenure, squatters Key grazing ranges

The wasteful use of non-renewable resources will definitely put the area into a state of "irreversibility". What we do now will have its influence, whether good or bad, on the people and the landscape for a long, long time. Before anything is decided a good look at the situation must be taken now.

"The Rights of People have to be considered."

Conclusion

This paper discusses the major economic and social issues facing the Smoky River Drainage Basin and points out some of the problems that will arise in its future development. It emphasizes the need for a plan through which growth can be guided, controlled or induced. This paper does not assume that all growth is good or bad regardless of its direction or degree, but it does assume that some measure of growth is both inevitable and desirable.

Necessarily, the final plan will be based on policies lying somewhere between the extremes and may well involve a combination of several growth - controlling and growth - stimulating techniques. There are no pat solutions or final answers in this paper. Its comments and observations are offered as a way of encouraging the people of the region to think seriously about the future and to help search for the answer to one fundamental question:

"What kind of region do we want?"

In June and July, 1973, a series of public hearings will be held to discuss the Foothills Area of Alberta. The hearings for the Smoky River Drainage Basin Study Area are scheduled to be held in Grande Cache on July 10, 1973, and in Grande Prairie on July 12 and 13, 1973.

Only with your help and participation can this project be a total success. Now is your chance to react to this paper. The staff of the Peace River Regional Planning Commission welcomes the chance of hearing your opinions and ideas. Also, the Commission's office is being set up as an information centre to provide the public with all available information possible on the area. Please take advantage of this service.

Thank you.

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